

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

In re Application of:	)	
	)	
Grant E. DUBOIS et al.	)	Group Art Unit: 1761
	)	
Application No.: 09/838,809	)	Examiner: Carolyn A. PADEN
	)	
Filed: April 20, 2001	)	Confirmation No.: 3526
	)	
For: NON CALORIC FROZEN	)	
CARBONATED BEVERAGE	)	

**Attention: Mail Stop Appeal Brief—Patents**  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**VIA EFS-Web**

Sir:

**APPEAL BRIEF UNDER 37 C.F.R. § 41.37**

This is an appeal to the Board of Patent Appeals and Interferences (“the Board”) from the Final Office Action dated December 3, 2007, rejecting claims 13, 14, 16, 17, 19, 20, 23, 26-28, 31, 34-37,<sup>1</sup> 40, 42, 43, 54-90, 97-102, and 106-128, in the above-referenced patent application. The appealed claims, as rejected, are set forth in the attached Appendix, Section IX.

In support of the Notice of Appeal filed June 3, 2008, and further to Board Rule 41.37, Appellant presents this brief and encloses the fee of \$540.00 required under 37 C.F.R. § 41.20(b)(2) herewith using the EFS-RAM system. Appellants file herewith the necessary

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<sup>1</sup> Page 2 of the PTOL-326 for the Final Action dated December 3, 2007, fails to include claims 35 and 36 as rejected claims, while page 3 of the PTOL-326 notes them to be pending. Appellants believe this to be an Examiner error and, based upon the articulated rejection of claims 35 and 36 in the Final Action, Appellants have treated them as rejected.

petition and fee requesting a five-month extension of time for filing this brief on appeal. Please charge any insufficient fees or credit any overpayment to Deposit Account No. 06-0916.

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**I. Real Party in Interest**

The real party in interest is The Coca-Cola Company, the assignee of record as reflected in the assignment recorded on August 21, 2001, at Reel 012118 and Frame 0641.

**II. Related Appeals and Interferences**

Appellant's undersigned legal representative knows of no other appeals or interferences that will directly affect, be directly affected by, or have a bearing on, the Board's decision in the pending appeal.

### **III. Status of Claims**

Claims 13, 14, 16, 17, 19, 20, 23, 26-28, 31, 34-37, 40, 42-43, 54-90, 97-102, 106-128 are pending in this application. Claims 1-12, 15, 18, 21, 22, 24-25, 29-30, 32-33, 38-39, 41, 44-53, 91-96, and 103-105 have been canceled. Claims 13, 14, 16, 17, 19, 20, 23, 26-28, 31, 34-37, 40, 42-43, 54-90, 97-102, 106-107 and 110 have been amended. No claims have been added herein. Claims 13, 14, 16, 17, 19, 20, 23, 26-28, 31, 34-37, 40, 42, 43, 54-90, 97-102, and 106-128<sup>2</sup> have been finally rejected and are appealed.

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<sup>2</sup> While claim 128 has been enumerated as rejected on PTOL-326 for the Final Office Action dated December 3, 2007, no ground of rejection for claim 128 has been articulated in the body of that office action. Thus, Appellants herein treat claim 128 as allowed. Should the Examiner subsequently articulate a rejection of claim 128, Appellants reserve the right to provide a complete response to any such position.

**IV. Status of Amendments**

All amendments have been entered. No amendments were filed after the Final Office Action mailed December 3, 2007.

**V. Summary of Claimed Subject Matter**

This application describes and claims reduced calorie, and particularly non-caloric, frozen beverages. Far different from ordinary flavored icy drinks or homemade treats from residential freezers, the claimed beverages and systems (and methods of making them) generally focus on dispensing hard-to-freeze, low-caloric slush from mechanical mixers in a commercial setting, such as a convenience store. 2:1-14, 3:1-10; 4:1-4.<sup>3</sup> The present inventors overcame significant problems in attaining low-caloric slush by recognizing that certain freezing point depressants would allow for the proper dispensing of low-calorie, slushy beverages from standard mechanical mixing equipment. 2:1-6. Specifically, the application claims frozen beverage dispenser systems (claims 13 and 23), a method for making a frozen carbonated dispenser beverage (claim 31), a method for controlling the freezing point depressant character of a beverage syrup (claim 37), a method of depressing the freezing point of a reduced calorie beverage syrup (claim 54), and a reduced calorie frozen carbonated dispenser beverage (claim 112).

The present application, as reflected in independent claim 13, is generally directed to a novel frozen carbonated beverage dispenser system for reduced calorie frozen carbonated beverages. In addition, as reflected in independent claim 23, the present application is also directed to a frozen non-carbonated beverage dispenser system for reduced calorie frozen non-carbonated beverages. Importantly, each system requires a specifically formulated beverage syrup that:

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<sup>3</sup> Appellant uses the notation “page:line(s)” or “column:line(s)” to refer to the cited portion of a reference.



- 1) uses a combination of a non-caloric sweetener and a low calorie sugar acting as a freezing point depressant;
- 2) contains an amount of freezing point depressant designed to mimic the freezing point depression observed with full calorie sugar beverages; and
- 3) is dispensable as a slush from a mechanical mixing chamber.

The present application, as reflected in independent claim 31, is generally directed to a novel method for making reduced calorie frozen carbonated dispenser beverages. By this method a beverage, made from a beverage syrup, water, and carbon dioxide, is dispensed from a mechanical mixing chamber as a slush. Importantly, the beverage syrup:

- 1) uses a combination of a non-caloric sweetener and a low calorie sugar acting as a freezing point depressant; and
- 2) contains an amount of freezing point depressant designed to mimic the freezing point depression observed with full calorie sugar beverages.

Independent claim 37 further shows a method for controlling the freezing point depressant character of the beverage syrup to render it capable of dispensing from a mechanical mixing chamber comprising:

- 1) blending a combination of a non-caloric sweetener and a low calorie sugar as a freezing point depressant; and

- 2) controlling the amount of freezing point depressant to mimic the freezing point depression observed with full calorie sugar beverages.

Independent claim 54 is directed at a method of depressing the freezing point of a reduced calorie beverage syrup by replacing up to one third of the high potency, non-caloric sweetener with a low calorie sugar chosen from propylene, glycol, sorbitol, and glycerol.

Claim 112 is directed to a reduced calorie frozen carbonated dispenser beverage for dispensing from a mechanical mixing chamber where the beverage is made from a beverage syrup, water and carbon dioxide. Importantly, the beverage syrup:

- 1) uses a combination of a non-caloric sweetener and a low calorie sugar acting as a freezing point depressant; and
- 2) contains an amount of freezing point depressant designed to mimic the freezing point depression observed with full calorie sugar beverages.

At the time of invention, prior art full calorie frozen carbonated and non-carbonated beverages were well known, but could not be made in low-calorie or non-caloric versions because of problems with freezing point depression—essentially, these beverages could not be made in “slush” form without sugars which act to depress the freezing point. When placed into mechanical mixing chambers, prior art reduced calorie and non-caloric beverages would freeze solid, rendering them non-dispensable. 3:1-14.

**VI. Grounds of Rejection to Be Reviewed on Appeal**

There are five grounds of rejection to be reviewed on appeal:

1. Whether claims 31, 34-37, 40, 42, 43, 54, 108-112, and 115-126 are anticipated under 35 U.S.C. § 102(e) by U.S. Patent Publication No. 2002/0136803 to *Stefandl* in view of U.S. Patent No. 5,380,541 to *Beyts* and further in view of the admitted state of the prior art at paragraph [002] of Appellant's specification or U.S. Patent No. 5,806,550 to *Frank*;
2. Whether claims 13, 14, 20, 23, 28, 31, 37, 54-90 and 106-127 are obvious under 35 U.S.C. § 103(a) over U.S. Patent No. 3,826,829 to *Marulich* in view of U.S. Patent No. 5,380,541 to *Beyts*;
3. Whether claims 16, 17, 26, 34, 40, 42, and 43 are obvious under 35 U.S.C. § 103(a) over U.S. Patent No. 3,826,829 to *Marulich* in view of U.S. Patent No. 5,380,541 to *Beyts*, in further view of U.S. Patent No. 4,452,824 to *Cole*;
4. Whether claims 19, 27, and 35 are obvious under 35 U.S.C. § 103(a) over U.S. Patent No. 3,826,829 to *Marulich* in view of U.S. Patent No. 5,380,541 to *Beyts* and further in view of U.S. Patent No. 4,452,824 to *Cole*, and further in view of U.S. Patent No. 6,066,345 to *de Cock*; and,
5. Whether claims 97-102 are obvious under 35 U.S.C. § 103(a) over U.S. Patent No. 3,826,829 to *Marulich* in view of U.S. Patent No. 5,380,541 to *Beyts* and further in view of U.S. Patent No. 4,452,824 to *Cole*, and further in view of U.S. Patent No. 6,432,464 to *Andersen*.

There are no other rejections of any pending claim in this application. There are no references besides Stefandl, Beyts, Frank, Marulich, Cole, Andersen, and de Cock that are cited as the basis for the rejections.

Each claim of this patent application is separately patentable and, upon issuance, will be entitled to a separate presumption of validity under 35 U.S.C. § 282. Solely for convenience in handling during this proceeding, claims 97-102 (rejection number 5) will stand or fall with claim 13 (rejection number 2).

## **VII. Argument**

The invention as presently claimed is in condition for immediate allowance. For all of the reasons discussed below, Appellant respectfully requests that the outstanding rejections be withdrawn and the application passed to grant.

### **Rejection under 35 U.S.C. § 102(e)**

The Office rejects claims 31, 34-37, 40, 42, 43, 54, 108-112, and 115-126 under 35 U.S.C. § 102(e) as allegedly anticipated by U.S. Patent Publication No. 2002/0136803 to *Stefandl* in view of U.S. Patent No. 5,380,541 to *Beyts* and further in view of the admitted state of the prior art at paragraph [002] of Appellant's specification, or U.S. Patent No. 5,806,550 to *Frank*. See Final Office Action at 2:08-11.<sup>4</sup> For at least the following reasons, Appellant respectfully traverses this rejection and requests favorable reconsideration of the claimed invention.

#### **A. The Office Failed to Provide a Single Reference Disclosing Each and Every Element of the Pending Claims**

"A claim is anticipated only if each and every element set forth in the claim is found either expressly or inherently described in a *single* prior art reference." See MPEP § 2131 (8th ed., rev. 6 Sept. 2007) (emphasis added). Furthermore, "[t]he identical invention must be shown in as complete detail as is contained in the . . . claim[s]." *Id.* (quoting *Richardson v. Suzuki*

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<sup>4</sup> Appellant notes that the Office has vacillated between lodging this rejection under 35 U.S.C. § 102(e) and § 103(a). (*Compare* Office Action dated December 3, 2007, at 2:8-11, *and* Office Action dated November 20, 2006, at 2:10-13 (both alleging anticipation); *with* Office Action dated July 3, 2007, at 2:8-11, *and* Office Action dated March 22, 2006, at 2:20-3:2 (both alleging only obviousness).) In the most recent Final Office Action, the Office rejected the claims under § 102(e) but analyzed the rejection under § 103(a), even summarizing the rejection as allegedly "establish[ing] a prima facie case for obviousness." See Final Office Action at 2 and 5.

*Motor Co.*, 868 F.2d 1126, 1236 (Fed. Cir. 1989)). Appellant asserts that this long-standing test for anticipation under 35 U.S.C. § 102 has not been met here.

***1. Claims 31, 34-36, and 108 Are Not Anticipated***

The Office failed to provide a single reference that discloses, expressly or inherently, each and every element of the pending claims, as required by law. The Office's primary reference, *Stefandl*, does not teach, either expressly or inherently, the method for making a reduced calorie frozen carbonated dispenser beverage with a mechanical beverage dispenser having a mechanical mixing chamber, as claimed in independent claim 31. The Office admits that *Stefandl* fails to disclose (1) inclusion of a high intensity sweetener in the product, (2) that sugar alcohols are sweeteners, (3) the freezing point of the invention, (4) the use of a commercial dispenser. *See* Final Office Action at 3:3-5 and 3:10-15.

Similarly, no other reference cited by the Office discloses, expressly or inherently, each and every element of the pending claims. For instance, *Beyts* is generally directed toward synergistic sucralose compositions, while *Frank* is generally directed toward a method of mixing liquid and gas ingredients in a mixing chamber to affect beverage properties. Both references fail to disclose a method for making a reduced calorie frozen carbonated dispenser beverage dispensable from a mechanical beverage dispenser having a mechanical mixing chamber that specifically incorporates reduced calorie beverage syrup as contemplated in the pending claims. Independent claim 31, and its rejected dependent claims 34-36 and 108, are not anticipated by *Stefandl*, *Beyts*, or *Frank*, and should be allowed. For at least the reason that the Office has failed to provide a single reference capable of anticipating the pending claims, Appellant respectfully requests that this rejection be withdrawn.

**2. *Claims 37, 40, 42, 43, 109, and 111 Are Not Anticipated***

*Stefandl* does not teach, expressly or inherently, a method of controlling the freezing point depressant characteristics for a frozen carbonated beverage dispensable from a mechanical mixing chamber, as claimed in independent claim 37. Furthermore, the Office admits that *Stefandl* fails to disclose (1) inclusion of a high intensity sweetener in the product, (2) that sugar alcohols (e.g., erythritol, isomalt, lactitol, maltitol, sorbitol, glycerol, and glycol) are sweeteners, and (3) the use of a commercial dispenser. *See* Final Office Action at 3:3-5 and 3:14-15. As such, *Stefandl* clearly fails to anticipate the present invention under 35 U.S.C. § 102(e).

Similarly, no other reference cited by the Office discloses, expressly or inherently, each and every element of the pending claims. For instance, *Beyts* is generally directed toward synergistic sucralose compositions, while *Frank* is generally directed toward a method of mixing liquid and gas ingredients in a mixing chamber to affect certain beverage properties. Both references fail to disclose a method for controlling the freezing point depressant characteristics for a frozen carbonated beverage dispensable from a mechanical mixing chamber. Independent claim 37, and its rejected dependent claims 40, 42 (canceled), 43, 109, and 111, are not anticipated by any reference cited by the Office, and should be allowed.

**3. *Claims 54 and 110 Are Not Anticipated***

Similarly, *Stefandl* does not teach a method of depressing the freezing point of a reduced calorie beverage syrup by replacing up to one-third of a high-potency non-caloric sweetener with a freezing point depressant chosen from at least one sugar alcohol (propylene glycol, glycerol, and sorbitol), as claimed in independent claim 54.

The Office admits that *Stefandl* fails to disclose (1) inclusion of a high intensity sweetener in the product, (2) that sugar alcohols (e.g., erythritol, isomalt, lactitol, maltitol, sorbitol, glycerol, and glycol) are sweeteners, and (3) the use of a commercial dispenser. *See* Final Office Action at 3:3-5 and 3:14-15. As such, *Stefandl* clearly fails to anticipate the present invention under 35 U.S.C. § 102(e).

No other reference cited by the Office discloses, expressly or inherently, each and every element of the pending claims. For instance, *Beyts* is generally directed toward synergistic sucralose compositions, while *Frank* is generally directed toward a method of mixing liquid and gas ingredients in a mixing chamber to affect certain beverage properties. Both references fail to disclose a method for depressing the freezing point of a reduced calorie beverage syrup by replacing up to one-third of a high-potency non-caloric sweetener with a freezing point depressant chosen from at least one sugar alcohol (propylene glycol, glycerol, and sorbitol). Independent claim 54 and its rejected dependent claim 110 are not anticipated by any reference cited by the Office, and should be allowed.

#### **4. *Claims 112 and 115-126 Are Not Anticipated***

*Stefandl* fails to disclose, expressly or inherently, a reduced calorie frozen carbonated dispenser beverage for dispensing from a mechanical mixing chamber comprising, *inter alia*, a reduced calorie beverage syrup comprising a mixture of high-potency non-caloric sweetener and a low-caloric sugar, as claimed in independent claim 112. Independent claim 112 and its rejected dependent claims 115-126<sup>5</sup> are not anticipated by any reference cited by the Office, and should be allowed.

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<sup>5</sup> Claims 123-24 are moot, as they are presently canceled.



The Office admits that *Stefandl* fails to disclose (1) inclusion of a high intensity sweetener in the product, (2) that sugar alcohols (e.g., erythritol, isomalt, lactitol, maltitol, sorbitol, glycerol, glycol) are sweeteners, (3) the freezing point of the invention, (4) the use of a commercial dispenser. *See* Final Office Action at 3:3-5 and 3:10-15. As such, *Stefandl* clearly fails to anticipate the present invention under 35 U.S.C. § 102(e).

Similarly, no other reference cited by the Office discloses, expressly or inherently, each and every element of the pending claims. For instance, *Beyts* is generally directed toward synergistic sucralose compositions, while *Frank* is generally directed toward a method of mixing liquid and gas ingredients in a mixing chamber to affect certain beverage properties. Both references fail to disclose a reduced calorie frozen carbonated dispenser beverage for dispensing from a mechanical mixing chamber comprising, *inter alia*, a reduced calorie beverage syrup comprising a mixture of high-potency non-caloric sweetener and a low-caloric sugar. For at least the reason that the Office has failed to provide a single reference anticipating the pending claims, Appellant respectfully requests that this rejection be withdrawn.

**B. The Office Improperly Combined References When Attempting to Establish Anticipation; This Attempt Fails.**

“Normally, only one reference should be used in making a rejection under 35 U.S.C. § 102.” MPEP § 2131.01. However, a 35 U.S.C. § 102 rejection over multiple references has been held to be proper, but only when “the extra references are cited to (A) prove the primary reference contains an ‘enabled disclosure,’ (B) explain the meaning of a term used in the primary reference, or (C) show that a characteristic not disclosed in the reference is inherent.” *Id.* The Office does not allege to combine references for any of those reasons.

The Office improperly attempts to bolster *Stefandl* by incorporating *Beyts* and *Frank*. See Final Office Action at 2:8 to 5:10. The Office has not shown, and cannot show, that the claimed inventions were disclosed identically in *Stefandl*, and that *Beyts* and *Frank* were relied on only to show that *Stefandl* has an enabled disclosure. MPEP § 2131.01 (I). Similarly, *Beyts* and *Frank* are not introduced merely to show the meaning of a term used in *Stefandl*. MPEP § 2131.01 (II). Last, *Beyts* and *Frank* are not disclosed to prove that the elements that *Stefandl* failed to mention<sup>6</sup> were inherent and “necessarily present in the thing described in the reference.” MPEP § 2131.01 (III) (citing *Continental Can Co. USA v. Monsanto Co.*, 948 F.2d 1264, 1268 (Fed. Cir. 1991)). For example, the commercial dispenser not disclosed in *Stefandl* (but disclosed in supplemental reference *Beyts*) is not an inherent and “necessarily present” characteristic of drinking a frozen carbonated beverage made in a freezer bag/container.

For at least those reasons, the Office has improperly combined *Beyts* and *Frank* with *Stefandl* to allege anticipation. The Office has failed to meet the requirements for combining references to allege anticipation. Thus, this combination is improper, and Appellant respectfully requests that this rejection under 35 U.S.C. §102(e) be withdrawn.

**C. Even Assuming *Arguendo* that the Office Seeks to Establish Obviousness under 35 U.S.C. § 103(a), the Office Has Not Established a Prima Facie Case**

The Supreme Court has authorized obviousness rejections under § 103(a) based on § 102(e). MPEP § 2136.02 (III) (citing *Hazeltine Res. v. Brenner*, 382 U.S. 252 (1965)). Even so, this does give the Office free reign to combine sources ad hoc for an “obviousness-type” rejection under 102(e); instead, it merely allows combination of references as of their filing dates

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<sup>6</sup> For example, *Stefandl* fails to disclose (1) inclusion of a high intensity sweetener in the product, (2) that sugar alcohols are sweeteners, and (3) the use of a commercial dispenser. See Final Office Action at 3:3-5 and 3:14-15.

when attempting to show obviousness under 103(a). *Id.*; *see also* Final Office Action at 5:5-10 (claiming that the § 102(e) rejection “establishes a prima facie case for obviousness” and that although “Appellant urges that the prior art relied on is not the same as the claimed composition . . . the rejection is an obviousness type rejection”).

Thus, assuming *arguendo* that the Office, despite its lack of clarity, is actually attempting to show obviousness under 35 U.S.C. § 103(a), the Office still fails to establish a prima facie case, providing yet another reason why this rejection should be withdrawn. If the Office intended to reject claims 31, 34-37, 40, 42, 43, 54, 108-12, and 115-26 under 35 U.S.C. § 103(a) as allegedly unpatentable over *Stefandl* in view of *Beyts* and further in view of the allegedly admitted state of the prior art at paragraph [002] of Appellant’s specification, or *Frank*, its burden is not met here. *See* Final Office Action at 2:8-11. For at least the following reasons, Appellant respectfully traverses this rejection.

“The key to supporting any rejection under 35 U.S.C. § 103 is the clear articulation of the reason(s) why the present application would have been obvious. . . . [R]ejections on obviousness cannot be sustained with mere conclusory statements.” MPEP § 2142 (citations omitted). “All words in a claim must be considered in judging the patentability of that claim against the prior art.” MPEP § 2143.03. “In determining the differences between the prior art and the claims, the question under 35 U.S.C. § 103 is not whether the differences themselves would have been obvious, but whether the application as a whole would have been obvious.” MPEP § 2141.02 (I) (emphasis in original).

Here, the Office essentially alleges that the *Stefandl* invention is substantially identical to the claimed invention, except that *Stefandl* fails to disclose (1) inclusion of a high intensity sweetener in the product, (2) that sugar alcohols (e.g., erythritol, isomalt, lactitol, maltitol,

sorbitol, glycerol, glycol) are sweeteners, (3) the freezing point of the invention, and (4) the use of a commercial dispenser. *See* Final Office Action at 3:3-5 and 3:10-15. This is a vastly oversimplified comparison of *Stefandl* and the claimed invention. The Office supports its rejection by alleging that *Beyts* and *Frank* cure these deficiencies. *Id.* However, a prima facie case of obviousness has not been established because the Office has neither properly determined the scope and content of *Stefandl*, nor properly ascertained the differences between the present application and *Stefandl*. Accordingly, the Office has failed to articulate a reason why *Stefandl* would have rendered the present application obvious to one of ordinary skill in the art.

***1. The Office Mischaracterizes Stefandl, Leading to an Unsustainable Rejection***

The pending claims recite, *inter alia*, a beverage for use with a mechanical dispenser, a dispenser system comprising the beverage, the combination of a beverage and a mechanical dispenser, and a method for controlling the freezing point of a beverage making it capable of being dispensed from a mechanical dispenser. The Office further states:

The claims further appear to differ from *Stefandl* in the recitation of the use of a commercial dispenser instead of a home dispenser. Sample D of *Stefandl* provided a slushy product when the product was frozen (see page 4, paragraph 0054). So even if a commercial mixing device was not used in *Stefandl*, it is clear from the reference that the sample could have been process [sic] in a commercial mixer because it is slushy.

Final Office Action at 3:14-19. Here, the Office makes a critical error in analysis.

***a. The Invention in Stefandl is Not a Slushy in its Refrigerated Form, and Nothing in Stefandl Suggests Its Beverage Product Is Capable of Being Dispensed From a Mechanical Dispenser***

The invention claimed in *Stefandl* is *not* a slushy in its refrigerated form, and the entire point of novelty heralded in *Stefandl* is the nature of the phase change that occurs once the

product is removed from the freezer. *Stefandl* claims that a certain mixture of ingredients creates a product, which freezes completely, and will then defrost and form a slushy for consumption. The beverages recited therein are *not* originally in slushy form in the “home dispenser” as improperly alleged by the Office. *Stefandl* makes this abundantly clear, for example:

- “This invention is generally related to . . . beverages which are intended for storage and/or shipment under refrigeration, especially in a frozen condition, followed by *defrosting prior to consumption.*” [002];
- “[P]roducts prepared in accordance therewith are . . . made for convenient and/or necessary freezing prior to use, *followed by their removal from freezing temperature conditions and defrosting to a flowable consistency in reduced periods of time* and thus made promptly available for appropriate use.” [003];
- “. . . which are subjected to refrigeration under freezing conditions . . . which can *then be defrosted into a flowable condition* suitable for easy consumption . . .” [005];
- alleging that prior art does not have “the advantages for *freezing and defrosting* within the time limits to obtain the desired texture” [006];
- “unexpected advantages for freezer storage and *rapid defrostability*” [007];
- “It is a further objective to provide a beverage . . . which can be at freezing temperature conditions and thereafter be consumed

as a cold liquid or slush *after a short period of warming (defrosting) time.*” [0016];

- “To further demonstrate the advantages of the invention product . . . ten samples were prepared and tested . . . *for the time period to change (defrost) from a frozen solid to a liquid, the period of time necessary to change from solid to liquid (defrost time)* were compared and shown to demonstrate the great advantages of the invention.” [0063];
- Table 1, which shows the best defrost time accomplished to take a product from frozen to consumable slushy form as 75 minutes;
- concluding that the defrost times of the present invention are less than samples without the claimed mixture of ingredients [0065]; and
- Claim 2: “A portable, packaged food product . . . *adapted for freezing and defrosting prior to consumption.*”

(Emphases added.) Moreover, *Stefandl* has an explicit comparison between highlighting the poor “melt-down phase (defrost period of time)” for the control group of Comparison Example 1 ([0046]), and touting the “outstanding advantages of the invention herein disclosed and claimed herein were observed . . . [and] the behavior of liquids containing these ingredients in varying combinations and amounts on *freezing and melting (defrosting)* was noted . . .” found in later Examples and shown in Table 1 ([052] (emphasis added)).

Even the specific line cited by the Office supports Appellant's contention. *See* Final Office Action at 2:18-19. The Office cites page 4, paragraph [0054], which states that "Sample D was not frozen to a solid block, but instead was slushy<sup>7</sup> and exhibited the consistency of a snowball." But, the very next paragraph states: "After the samples were allowed to stand at room temperature for about 20 minutes . . . Sample D had turned completely to slush . . . . The consistency of Sample D was such that it was *then* available to be consumed as a liquid." *Stefandl* at [0055] (emphasis added).

*Stefandl* clearly differs from the claimed invention in that it produces a frozen product that must then be defrosted to create a consumable beverage. *See also Stefandl* at [0023] (suggesting users pack the frozen product into a child's lunch, where the "frozen beverage thereafter defrosts in a short period of time to a consistency suitable for consumption"). That the *Stefandl* product is frozen and only becomes a consumable slushy beverage when removed from refrigeration suggests that the product of *Stefandl* could not be processed in a commercial dispenser, wherein the product is maintained indefinitely in slushy form and is never frozen solid into a block that needs to melt-down.<sup>8</sup> Thus, the Office's unsupported, conclusory opinion that

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<sup>7</sup> "Slushy" as used adjectively here describes a beverage that is not ready for consumption and has the consistency of a snowball.

<sup>8</sup> The Office dismisses the environment as unimportant when, in fact, it goes to the very heart of what Appellant discovered. As disclosed and claimed, Appellant produced a beverage syrup from a mixture of a high-potency, non-caloric sweetener and a low-caloric sugar that is dispensable from a mechanical dispensing device. The cited references do not teach or suggest such a result. Contrary to the Office's conclusion, the skilled artisan would not have expected a beverage that could freeze in a home freezer to be appropriate for use in a mechanical mixing device, since the freeze conditions are so different. A home freezer results in static freeze conditions, where liquids and other products merely sit and slowly lower in temperature until frozen. The mechanical mixing devices and chambers of the present inventions, however, provide dynamic freeze conditions under which the liquids and other products may be agitated while lowering in temperature. The mixing naturally does work upon the liquids and other products and, according to basic physics, that work results in temperature increases as it is

“it is clear from the reference that this sample could have been process [sic] in a commercial mixer because it is slushy” rests on a false premise that the *Stefandl* product is slushy. However, the *Stefandl* product is not a slushy and cannot be processed in a commercial mixer. See discussion *supra*; Final Office Action at 3:18-19.

b. Placing the *Stefandl* Product into a Commercial Dispenser Would Not Have Been Obvious to a Skilled Artisan; In Fact, It’s Likely Impossible

The Office then incorrectly makes the leap in logic that, because commercial mixers are known in the art (e.g., *Frank*) for use with slushy beverages, “[i]t would have been obvious to process the beverage of *Stefandl* in a commercial mixing machine in order to provide the consumer with a slushy beverage when he or she is away from home.” See Final Office Action at 3:19 to 4:6. As shown above, *Stefandl* creates blocks of ice with melt-down characteristics that reduce to a slushy form after the ice is defrosted. It would *not* have been obvious to a skilled artisan to put a block of ice with unique melt-down characteristics into a commercial mixing machine. The *Stefandl* mixture cannot be simply loaded into the commercial dispenser to get an equivalent slushy, because the different freezing point would result in a block of ice—a clear result from *Stefandl*. The *Stefandl* mixtures simply do not belong in a commercial mixing machine.

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performed. Yet the mechanical mixing devices and chambers still result in a frozen product and can dispense that product. Those differences, as well as abundant others, highlight aspects of the present inventions that patentably define the pending claims over the cited references.



c. Stefandl Does Not Recite the Freezing Point and Composition of the Present Application, Highlighting Why Stefandl Would Not Be Capable of Dispensation from a Mechanical Dispenser; This Critical Difference Should Not be Dismissed by the Office

In a related error, the Office discounts the relevance that *Stefandl* does not mention the freezing point of its product, offering again a merely conclusory opinion that “no difference is seen between the freezing point of the beverage of the claims and the freezing point of *Stefandl*.” *See* Final Office Action at 3:10-13. Intrinsically related to the different phases of the products when at steady-state (solid for *Stefandl* and slushy for the present invention) is a difference in the freezing point of the products—a difference that makes all the difference. The right freezing point temperature allows the beverage to remain in the slush phase rather than merely forming into a block of ice, as in *Stefandl*. And freezing point depends directly on the composition of the beverage syrup.

Thus, *Stefandl*’s recitation of a differing composition than in the present claims is not a trivial difference—and the composition is not chosen, as surmised by the Office, where the “whole idea of the invention is to obtain a low calorie carbonated dispenser beverage having the taste of a full calorie product.” Final Office Action at 4:17-19. The Office dismisses Appellant’s contention that the claimed composition leads to the formation of an important type of ice, finding it unpersuasive and claiming, without basis, that optimizing the sweetness is more important. *Id.* at 4:15 to 5:4. Appellant is not contending that taste is unimportant; rather, sweetness and ice formation can be concurrently optimized. But, while taste parameters can be found satisfactory with a variety of sweetness combinations, without the composition that leads to the correct ice formation, this product simply will not form a slushy capable of being dispensed from a mechanical mixer, as claimed in the present invention.

In the face of the clear language of the cited references and clear text of the present application, the Office has offered nothing other than unsupported conclusory opinions on the patentability of the pending claims; this is simply not enough to sustain this rejection. “Rejections on obviousness cannot be sustained with mere conclusory statements.” MPEP § 2142 (citations omitted). For at least those reasons, Appellant respectfully requests that this rejection be withdrawn.

**2. Combining Beyts and Frank with Stefandl Cannot Cure the Deficiencies in Stefandl**

Appellant respectfully traverses the rejection claims 31, 34-37, 40, 42, 43, 54, 108-12, and 115-26 under 35 U.S.C. § 103(a) as allegedly unpatentable over *Stefandl* in view of *Beyts* and further in view of the allegedly admitted state of the prior art at paragraph [002] of Appellant’s specification, or *Frank*. See Final Office Action at 2:8-11.

The Office alleges that *Stefandl* “discloses a freezer altering additive composition . . . made from a 1) carbohydrate, 2) glycerol or propylene glycol, and 3) a sugar alcohol.”<sup>9</sup> *Id.* at 2:12-15 (citing Claim 1 of *Stefandl*). The Office asserts that *Beyts* cures *Stefandl*’s failure to recite a high intensity sweetener in the product and that sugar alcohols are sweeteners. *Id.* at 3:3-10. The Office asserts that *Frank* cures *Stefandl*’s failure to recite a mechanical dispenser. *Id.* at 3:14-19. The Office dismisses *Stefandl*’s failure to recite a freezing point. *Id.* at 3:10-13; see also *supra* at Part I.C.1.c (discussing why such a dismissal is inappropriate). To establish a *prima facie* case of obviousness using this rationale, the Office “must articulate . . . a finding that the prior art included each element claimed, although not necessarily in a single prior art

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<sup>9</sup> Glycerol and propylene glycol, listed as the second component in *Stefandl*, are both sugar alcohols as well.

reference, with the only difference between the claimed invention and the prior art being the lack of actual combination of the elements in a single prior art reference.” MPEP § 2143(A). The Office has failed to make such a showing.

The Office bases its rejection on the false premise that *Stefandl* discloses a method and product substantially as claimed, lacking only the recitation that sugar alcohols are sweeteners, the use of high intensity sweeteners in the product, and the use of a mechanical dispenser. *See* Final Office Action at 2:12 to 4:6. This premise is flawed—*Stefandl* fundamentally fails to disclose a beverage capable of being dispensed from a mechanical dispenser. The Office’s combination with *Beyts* and *Frank* does not make up for that paramount deficiency. *See supra* Part I.C.1.a. In the instant invention, the environment in which the beverage is dispensed is a physical limitation on the beverage since the beverage must be capable of being dispensed from a mechanical dispenser. As Appellant has discussed at length, many times in prior responses, a composition that is capable of freezing under home freezer conditions is not the same as a composition that can be dispensed from a mechanical dispensing device. Nothing within *Stefandl* or *Beyts* teaches or suggests that the beverage syrups disclosed therein are appropriate for dispensing from a mechanical dispenser having a mechanical mixing chamber. *Id.*

Neither *Stefandl* nor *Beyts* teach or suggest a beverage capable of being dispensed from a mechanical commercial dispenser of *Frank*, and as such even the combination of those references fails to render the present invention obvious. For at least this reason, Appellant respectfully requests those objections be withdrawn.

**3. Examiner's Reference to the 1.131 Declaration Is Erroneous**

The Examiner states that the Rule 131 Declaration of Grant DuBois has been offered to overcome the rejection over *Stefandl*. That declaration was offered and accepted to overcome the rejection over *Broz*. A copy of this declaration is included as Appendix III for the Board's convenience.

**Rejection under 35 U.S.C. § 103(a)**

The Office rejected six independent claims (13, 23, 31, 37, 54, and 112) and seventy dependent claims (14, 16, 17, 19, 20, 26, 27, 28, 34, 35, 40, 42, 43, 55-90, 97-102, 106-111, and 113-127) under 35 U.S.C. § 103(a) as allegedly obvious over U.S. Patent No. 3,826,829 *Marulich* in view of *Beyts*, and in some instances in further combination with one or more of *Cole*, *de Cock*, and *Andersen*. The Office maintains those rejections for the reasons of record. See Final Office Action at 5:11 to 9:11. For at least the following reasons, Appellant respectfully traverses those rejections.

**A. Claims 13, 14, 20, 23, 28, 31, 37, 54-90, and 106-127 Are Not Unpatentable under 35 U.S.C. § 103(a) over *Marulich* in View of *Beyts***

The Office has rejected claims 13, 14, 20, 23, 28, 31, 37, 54-90, and 106-127 as allegedly unpatentable under 35 U.S.C. § 103(a) over *Marulich* in view of *Beyts*. See Final Office Action at 5:11-13. The Office only truly alleges that claim 13 would have been obvious, but failed to articulate any grounds for rejection for claims 14, 20, 23, 28, 31, 37, 54-90, and 106-127, and similarly failed to refer to any reasons of record supporting the rejection. *Id.* at 5:11 to 7:2.

“The key to supporting any rejection under 35 U.S.C. § 103 is the clear articulation of the reason(s) why the present application would have been obvious. . . . [R]ejections on

obviousness cannot be sustained with mere conclusory statements.” MPEP § 2142 (citations omitted). “Office personnel *must* explain why the difference(s) between the prior art and the present application would have been obvious to one of ordinary skill in the art.”

MPEP § 2141(III). The Office has clearly failed to carry this burden with respect to claims 14, 20, 23, 28, 31, 37, 54-90, and 106-27, and for at least this reason the rejections to all of those claims should be withdrawn.

The Office alleges that *Marulich* discloses “a slush beverage that is carbonated and is formed with water, sugars, polyols, flavor and coloring agents. The use of a mechanical mixer in conjunction with slush beverages is disclosed as well known in the art . . . the concept of using polyhydric alcohols, such as glycerol, sorbitol and propylene glycol . . . is indicated . . . [and] termed ‘freezing point depressant material.’” *Id.* at 5:14 to 6:3. The Office admits, however, that *Marulich* differs from claim 13 in that it fails to disclose (1) the use of a high-potency non-caloric sweetener in the product, and (2) the use of a low-caloric sugar as a freezing point depressant. *Id.* at 6:4-8.

The Office supports its rejection by alleging that *Beyts*, which “teaches the combination of sweeteners that include high intensity sweeteners . . . [and] also shows that sorbitol is a sweetener,” cures those deficiencies. *Id.* at 6:6-8. However, a prima facie case of obviousness has not been established because the Office has neither properly determined the scope and content of *Marulich* nor properly ascertained the differences between the present application and *Marulich*. Accordingly, the Office failed to articulate a reason why *Marulich* would have rendered the present application obvious to one of ordinary skill in the art.

***1. Marulich Teaches Away from the Claimed Invention***

*Marulich* teaches away from the claimed invention, and thus claim 13 (and all claims of the present application) are not obvious in view of *Marulich*. “A prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention.” MPEP § 2141.02 (VI) (citing *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540 (Fed. Cir. 1983)). Here, *Marulich* does more than merely disclose an alternative to the claimed invention; it criticizes, discredits, and otherwise discourages the solution claimed in the present invention.

*Marulich* discloses a “shelf-stable carbonated soft drink that has bifunctional uses. It can be drunk, as is, after conventional chilling or it can be consumed as a soft frozen carbonated beverage ice commonly referred to as ‘slush.’” *Marulich* at 3:30-34. *Marulich* achieves this slush consistency by using pectin-gum stabilizer, and the use of such stabilizer is a required element of *Marulich*, because “without any stabilizer the liquid froze solid.” *Id.* at 4:13-14. Thus, even if *Marulich* indicates that sugar alcohols could be used as freezing point depressants, it is clear that *Marulich* teaches away from the idea of using sugar alcohols without necessarily including stabilizers by showing that the lack of stabilizers will cause inappropriate ice crystal formation (“shale ice particles” or “solid block of ice,” both undesirable) that will not result in a consumable slush. *Id.* at 3:30 to 4:62. As such, it would not have been obvious to a skilled artisan to create the claimed invention by viewing *Marulich*, even in combination with the synergistic sweeteners disclosure in *Beyts*.

Further, *Beyts* teaches the synergistic effects of combining certain sweet saccharides and sucralose where synergy is defined as “increased sweetening power,” making *Beyts* almost wholly irrelevant to the present inventions. *See Beyts* at 2:9. In the present inventions, the

combination of high-potency non-caloric sweeteners and low-caloric sugar is not made with the express purpose of increasing sweetening power in the product; to the contrary, the present inventions clearly articulate that the ratios of ingredients used are inexorably tied to achieving the desired freezing point. Thus, *Beyts*, combined with any reference, would not render the combination in the present inventions obvious. For at least this reason, Appellant respectfully requests that this rejection be withdrawn.

**2. *Nothing in Marulich Suggests that Marulich, Even Modified by Beyts, Would Be Capable of Being Dispensed from a Mechanical Dispenser***

*Marulich*, like *Stefandl*, is concerned with the production of slush beverages in a home freezer, and not a mechanical dispenser beverage. Further, *Marulich* does not teach or suggest the use of erythritol as a freezing point depressant. *Marulich* is directed toward a sweetened product, not a substantially reduced calorie or non-caloric beverage of the present inventions. The present invention would not have been obvious because high potency low calorie sweeteners were known to provide insufficient freezing point depression. For all of the reasons of record and those discussed above, there is no suggestion that the beverage of *Marulich*, even as modified by *Beyts*, would be capable of being dispensed from a mechanical mixing dispenser. Since *Marulich*, alone or in combination with *Beyts*, does not teach a beverage capable of being dispensed from a mechanical dispenser, withdrawal of this ground of rejection is respectfully requested.

**B. *Claims 16, 17, 26, 34, 40, 42, and 43 are Not Unpatentable over Marulich in view of Beyts and Further in View of Cole***

The Office rejected seven dependent claims under 35 U.S.C. 103(a) as allegedly unpatentable over *Marulich* in view of *Beyts* and further in view of U.S. Patent No. 4,452,824 to

*Cole*. *Cole* is relied upon for disclosing that sugar alcohols can be used in foods and can depress their freezing points. The skilled artisan armed with this information is no closer to understanding how to make a dispensable reduced calorie beverage than when given *Marulich* and *Beyts* alone. Further, dependent claims 16 and 17 depend on allowable claim 13, dependent claim 26 depends on allowable claim 23, and dependent claims 40, 42, and 43 depend on allowable claim 37; by operation of law, each dependent claim is allowable for at least the same reasons the independent claims are allowable. *See supra* Part II.A. The Office's addition of *Cole* to these dependent claims does not alter the allowability, and Appellant respectfully requests that this rejection be withdrawn.

**C. Claims 19, 27, and 35 are Not Unpatentable over *Marulich* in view of *Beyts* and Further in View of *Cole* and Further in View of *de Cock***

The Office rejected three dependent claims under 35 U.S.C. 103(a) as allegedly unpatentable over *Marulich* in view of *Beyts* further in view of *Cole*, and further in view of *de Cock*. *See* Final Office Action at 8:8-11. *de Cock* discloses that erythritol is a sugar alcohol. Nothing in *de Cock* would lead the skilled artisan to conclude that the use of erythritol would result in a superior reduced calorie frozen beverage which would have an appropriate consistency for dispensing from a mechanical mixing chamber. Further, dependent claim 19 depends on allowable claim 13, dependent claim 27 depends on allowable claim 23, and dependent claim 34 depends on allowable claim 31; by operation of law, each dependent claim is allowable for at least the same reasons the independent claims are allowable. *See supra* Part II.A. The Office's addition of *Cole* and *de Cock* to these dependent claims does not alter the allowability, and Appellant respectfully requests that this rejection be withdrawn.



**D. Claims 97-102 are Not Unpatentable over *Marulich* in view of *Beyts* and Further in View of *Cole* and Further in View of *Andersen***

The Office rejected three dependent claims under 35 U.S.C. 103(a) as allegedly unpatentable over *Marulich* in view of *Beyts* further in view of *Cole*, and further in view of U.S. Patent No. 6,432,464 to *Andersen*. *See* Final Office Action at 8:8-11. Dependent claims 97 and 98 depend on allowable claim 13, dependent claims 99 and 100 depend on allowable claim 23, dependent claim 101 depends on allowable claim 31, and dependent claim 102 depends on allowable claim 37; by operation of law, each dependent claim is allowable for at least the same reasons the independent claims are allowable. *See supra* Part II.A. The Office's addition of *Cole* and *Andersen* to these dependent claims does not alter the allowability, and Appellant respectfully requests that this rejection be withdrawn.

**Conclusion**

For the reasons given above, pending claims 13, 14, 16, 17, 19, 20, 23, 26-28, 31, 34-37, 40, 42, 43, 54-90, 97-102, and 106-128 are allowable and reversal of all outstanding rejections is respectfully requested.

To the extent any extension of time under 37 C.F.R. § 1.136 is required to obtain entry of this Appeal Brief, such extension is hereby respectfully requested. If there are any fees due under 37 C.F.R. §§ 1.16 or 1.17 which are not enclosed herewith, including any fees required for an extension of time under 37 C.F.R. § 1.136, please charge such fees to Deposit Account 06-0916.

Respectfully submitted,

FINNEGAN, HENDERSON, FARABOW,  
GARRETT & DUNNER, L.L.P.

Dated: January 5, 2009

/Robert C. Stanley/  
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**VIII. Claims Appendix**

1-12. (Canceled)

13. A frozen carbonated beverage dispenser system including a reduced calorie beverage for dispensing from a mechanical mixing chamber comprising:

- a. a reduced calorie beverage syrup containing a mixture of a high-potency non-caloric sweetener and a low caloric sugar, the low caloric sugar acting as a freezing point depressant;
- b. water; and
- c. carbon dioxide;

wherein the given freezing point is determined from a reference molal concentration of full-caloric sugar in a standard frozen carbonated beverage for achieving said given freezing point, and the amount of low-caloric sugar in the mixture is chosen to achieve substantially the same molal concentration thereof as the reference molal concentration; and

wherein the beverage is dispensable from a mechanical mixing chamber as a slush.

14. The system according to claim 127, wherein the amount is chosen to achieve said given freezing point.

15. (Canceled)

16. The beverage according to claim 127, wherein the low caloric sugar comprises a Sugar MNS chosen from at least one of erythritol, isomalt, maltitol, lactitol, or fructo-oligosaccharide sweetener.

17. The system according to claim 14, wherein the low caloric sugar comprises a Sugar MNS chosen from at least one of erythritol, isomalt, maltitol, lactitol, or fructo-oligosaccharide sweetener.

18. (Canceled)

19. The system according to claim 16, wherein the Sugar MNS is erythritol.

20. The system according to claim 16, wherein the beverage syrup contains a high-potency non-caloric sweetener chosen from at least one of aspartame, saccharin, acesulfame-K, cyclamate, or sucralose.

21. (Canceled)

22. (Canceled)

23. A frozen non-carbonated beverage dispenser system including a reduced calorie beverage for dispensing from a mechanical mixing chamber comprising:

- a. a beverage syrup containing a mixture of high-potency non-caloric sweetener and a low caloric sugar, said low-caloric sugar acting as a freezing point depressant;  
and
- b. water;

wherein the given freezing point is determined from a reference molal concentration of full-caloric sugar in a standard frozen carbonated beverage for achieving said given freezing point, and the amount of low-caloric sugar in the mixture is chosen to achieve substantially the same molal concentration thereof as the reference molal concentration and

wherein the beverage is dispensable from a mechanical mixing chamber as a slush.

24. (Canceled)

25. (Canceled)

26. The system according to claim 128, wherein the low caloric sugar comprises a Sugar MNS chosen from at least one of erythritol, isomalt, maltitol, lactitol, or fructo-oligosaccharide sweetener.

27. The system according to claim 26, wherein the Sugar MNS is erythritol.

28. The system according to claim 26, further comprising a high-potency non-caloric sweetener chosen from at least one of aspartame, saccharin, acesulfame-K, cyclamate, or sucralose.

29. (Canceled)

30. (Canceled)

31. A method of making a reduced calorie frozen carbonated dispenser beverage having a given freezing point comprising dispensing from a mechanical beverage dispenser having a mechanical mixing chamber a combination comprising:

a reduced calorie beverage syrup containing a mixture of a high-potency non-caloric sweetener and a low caloric sugar, said low caloric sugar acting as a freezing point depressant;

water; and

carbon dioxide,

wherein the amount of low caloric sugar is chosen to achieve said given freezing point, and

wherein the given freezing point is determined from a reference molal concentration of full-caloric sugar in a standard frozen carbonated beverage for achieving said given freezing point, and the amount of low caloric sugar in the mixture is chosen to achieve substantially the same molal concentration thereof as the reference molal concentration.

32. (Canceled)

33. (Canceled)

34. The method according to claim 31, wherein the low caloric sugar comprises a Sugar MNS chosen from at least one of erythritol, isomalt, maltitol, lactitol, or fructo-oligosaccharide sweetener.

35. The method according to claim 34, wherein the Sugar MNS is erythritol.

36. The method according to claim 34, wherein the beverage syrup contains a high-potency non-caloric sweetener chosen from at least one of aspartame, saccharin, acesulfame-K, cyclamate, or sucralose.

37. A method of controlling the freezing point depressant characteristics of a beverage syrup for a frozen dispenser beverage dispensable from a mechanical mixing chamber to be mixed with a diluent comprising the steps of:

- a. blending a high-potency non-caloric sweetener and a low-caloric sugar, said low-caloric sugar acting as a freezing point depressant for the finished beverage formulation;
- b. controlling the amount of low-caloric sugar to achieve a given freezing point of the finished beverage formulation; and

wherein the given freezing point is determined from a reference molal concentration of full-caloric sugar in a standard frozen carbonated beverage for achieving said given freezing point, and the amount of low caloric sugar in the mixture is chosen to achieve substantially the same molal concentration thereof as the reference molal concentration.

38. (Canceled)

39. (Canceled)

40. The method of claim 37, wherein the low caloric sugar comprises a Sugar MNS chosen from at least one of erythritol, isomalt, maltitol, lactitol, or fructo-oligosaccharide sweetener.

41. (Canceled)

42. The method of claim 37, wherein the low caloric sugar comprises a Sugar MNS chosen from at least one of erythritol, isomalt, maltitol, lactitol, or fructo-oligosaccharide sweetener.

43. The method of claim 40, wherein the beverage syrup contains a high-potency non-caloric sweetener chosen from at least one of aspartame, saccharin, acesulfame-K, cyclamate, or sucralose.

44-53. (Canceled)

54. A method of depressing the freezing point of a reduced calorie beverage syrup comprising:

preparing a reduced caloric beverage syrup by replacing up to one third of a high-potency non-caloric sweetener with a freezing point depressant chosen from at least one of propylene glycol, glycerol and sorbitol,

wherein the high-potency non-caloric sweetener includes sucralose.



55. The system according to claim 127, wherein the low caloric sugar is chosen from at least one of propylene glycol, glycerol, and sorbitol.

56. The system according to claim 55, wherein the low caloric sugar is chosen from at least two of propylene glycol, glycerol, and sorbitol.

57. The system according to claim 55, wherein the low caloric sugar includes propylene glycol, glycerol, and sorbitol.

58. The system according to claim 55, wherein the beverage contains a high-potency non-caloric sweetener chosen from at least one of aspartame, saccharin, acesulfame-K, cyclamate, and sucralose.

59. The system according to claim 58, wherein the high-potency non-caloric sweetener comprises sucralose.

60. The system according to claim 56, wherein the beverage contains a high-potency non-caloric sweetener chosen from at least one of aspartame, saccharin, acesulfame-K, cyclamate, and sucralose.

61. The system according to claim 60, wherein the high-potency non-caloric sweetener comprises sucralose.

62. The system according to claim 57, wherein the beverage contains a high-potency non-caloric sweetener chosen from at least one of aspartame, saccharin, acesulfame-K, cyclamate, and sucralose.

63. The system according to claim 62, wherein the high-potency non-caloric sweetener comprises sucralose.
64. The system according to claim 128, wherein the low caloric sugar is chosen from at least one of propylene glycol, glycerol, and sorbitol.
65. The system according to claim 64, wherein the low caloric sugar is chosen from at least two of propylene glycol, glycerol, and sorbitol.
66. The system according to claim 64, wherein the low caloric sugar includes propylene glycol, glycerol, and sorbitol.
67. The system according to claim 64, wherein the beverage contains a high-potency non-caloric sweetener chosen from at least one of aspartame, saccharin, acesulfame-K, cyclamate, and sucralose.
68. The system according to claim 67, wherein the high-potency non-caloric sweetener comprises sucralose.
69. The system according to claim 65, wherein the beverage contains a high-potency non-caloric sweetener chosen from at least one of aspartame, saccharin, acesulfame-K, cyclamate, and sucralose.
70. The system according to claim 69, wherein the high-potency non-caloric sweetener comprises sucralose.

71. The system according to claim 66, wherein the beverage contains a high-potency non-caloric sweetener chosen from at least one of aspartame, saccharin, acesulfame-K, cyclamate, and sucralose.

72. The system according to claim 71, wherein the high-potency non-caloric sweetener comprises sucralose.

73. The method according to claim 31, wherein the low caloric sugar is chosen from at least one of propylene glycol, glycerol, and sorbitol.

74. The method according to claim 73, wherein the low caloric sugar is chosen from at least two of propylene glycol, glycerol, and sorbitol.

75. The method according to claim 73, wherein the low caloric sugar includes propylene glycol, glycerol, and sorbitol.

76. The method according to claim 73, wherein the beverage contains a high-potency non-caloric sweetener chosen from at least one of aspartame, saccharin, acesulfame-K, cyclamate, and sucralose.

77. The method according to claim 76, wherein the high-potency non-caloric sweetener comprises sucralose.

78. The method according to claim 74, wherein the beverage contains a high-potency non-caloric sweetener chosen from at least one of aspartame, saccharin, acesulfame-K, cyclamate, and sucralose.

79. The method according to claim 78, wherein the high-potency non-caloric sweetener comprises sucralose.

80. The method according to claim 75, wherein the beverage contains a high-potency non-caloric sweetener chosen from at least one of aspartame, saccharin, acesulfame-K, cyclamate, and sucralose.

81. The method according to claim 80, wherein the high-potency non-caloric sweetener comprises sucralose.

82. The method according to claim 37, wherein the low caloric sugar is chosen from at least one of propylene glycol, glycerol, and sorbitol.

83. The method according to claim 82, wherein the low caloric sugar is chosen from at least two of propylene glycol, glycerol, and sorbitol.

84. The method according to claim 82, wherein the low caloric sugar includes propylene glycol, glycerol, and sorbitol.

85. The method according to claim 82, wherein the beverage contains a high-potency non-caloric sweetener chosen from at least one of aspartame, saccharin, acesulfame-K, cyclamate, and sucralose.

86. The method according to claim 85, wherein the high-potency non-caloric sweetener comprises sucralose.

87. The method according to claim 83, wherein the beverage contains a high-potency non-caloric sweetener chosen from at least one of aspartame, saccharin, acesulfame-K, cyclamate, and sucralose.

88. The method according to claim 87, wherein the high-potency non-caloric sweetener comprises sucralose.

89. The method according to claim 84, wherein the beverage contains a high-potency non-caloric sweetener chosen from at least one of aspartame, saccharin, acesulfame-K, cyclamate, and sucralose.

90. The method according to claim 89, wherein the high-potency non-caloric sweetener comprises sucralose.

91-96. (Canceled)

97. The system according to claim 13, wherein said beverage syrup further comprises tagatose.

98. The system according to claim 19, wherein said beverage syrup further comprises tagatose.

99. The system according to claim 23, wherein said beverage syrup further comprises tagatose.

100. The system according to claim 27, wherein said beverage syrup further comprises tagatose.

101. The method according to claim 35, wherein said beverage syrup further comprises tagatose.

102. The method according to claim 37, wherein said beverage syrup further comprises tagatose.

103-105. (Canceled)

106. The system according to claim 13, wherein said beverage syrup further comprises at least one mineral salt.

107. The system according to claim 23, wherein said beverage syrup further comprises at least one mineral salt.

108. The method according to claim 31, wherein said beverage syrup further comprises at least one mineral salt.

109. The method according to claim 37, wherein said beverage syrup further comprises at least one mineral salt.

110. The method according to claim 54, wherein said beverage syrup further comprises at least one mineral salt.

111. The method according to claim 37, wherein the low caloric sugar is erythritol.

112. A reduced calorie frozen carbonated dispenser beverage having a given freezing point for dispensing from a mechanical mixing chamber comprising:

(a) a reduced caloric beverage syrup containing a mixture of high-potency non-caloric sweetener and a low caloric sugar, the low caloric sugar depressing the freezing point of the mixture to create a frozen carbonated beverage dispensable from said mechanical mixing chamber;

(b) water; and

(c) carbon dioxide;

wherein the given freezing point is determined from a reference molal concentration of full-caloric sugar in a standard frozen carbonated beverage for achieving said given freezing point, and the amount of low-caloric sugar in the mixture is chosen to achieve substantially the same molal concentration thereof as the reference molal concentration.

113. The beverage according to claim 112, wherein the low caloric sugar comprises a Sugar MNS chosen from at least one of erythritol, isomalt, maltitol, lactitol, and fructo-oligosaccharide sweetener.

114. The beverage according to claim 114, wherein the Sugar MNS is erythritol.

115. The beverage according to claim 112, wherein the beverage syrup contains a high-potency non-caloric sweetener selected from at least one of aspartame, saccharin, acesulfame-K, cyclamate, and sucralose.

116. The beverage according to claim 112, wherein the low caloric sugar is chosen from at least one of propylene glycol, glycerol, and sorbitol.

117. The beverage according to claim 116, wherein the low caloric sugar is chosen from at least two of propylene glycol, glycerol, and sorbitol.

118. The beverage according to claim 116, wherein the low caloric sugar includes propylene glycol, glycerol, and sorbitol.

119. The beverage according to claim 118, wherein the beverage contains a high-potency non-caloric sweetener chosen from at least one of aspartame, saccharin, acesulfame-K, cyclamate, and sucralose.

120. The beverage according to claim 119, wherein the high-potency non-caloric sweetener comprises sucralose.

121. The beverage according to claim 117, wherein the beverage contains a high-potency non-caloric sweetener chosen from at least one of aspartame, saccharin, acesulfame-K, cyclamate, and sucralose.

122. The beverage according to claim 121, wherein the high-potency non-caloric sweetener comprises sucralose.

123. The beverage according to claim 118, wherein the beverage contains a high-potency non-caloric sweetener chosen from at least one of aspartame, saccharin, acesulfame-K, cyclamate, and sucralose.

124. The beverage according to claim 123, wherein the high-potency non-caloric sweetener comprises sucralose.



125. The beverage according to claim 112, wherein said beverage syrup further comprises tagatose.

126. The beverage according to claim 112, wherein said beverage syrup further comprises at least one mineral salt.

127. A system according to claim 13, further comprising:

a mechanical beverage dispenser including a mixing chamber for dispensing therefrom said reduced caloric beverage having a given freezing point.

128. The system according to claim 23, further comprising:

a mechanical beverage dispenser including a mixing chamber for dispensing therefrom said reduced caloric beverage having a given freezing point.

IX. **Evidence Appendix**

A copy of the Declaration of Grant De Bois under 37 C.F.R. § 1.131, originally submitted with Appellant's Response dated July 19, 2004, is provided for the Board's convenience.



**BEST AVAILABLE COPY**

**PATENT**  
**Customer No. 22,852**  
**Attorney Docket No. 7738.147**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Application of: )  
Grant E. DUBOIS et al. ) Group Art Unit: 1761  
Application No.: 09/838,809 ) Examiner: C. Paden  
Filed: April 20, 2001 )  
For: NON CALORIC FROZEN )  
CARBONATED BEVERAGE )

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

**DECLARATION UNDER 37 C.F.R. § 1.131**

I, Grant DuBois, state that I am a named applicant of the above-identified application and that I am an inventor of the subject matter described and claimed therein. I declare that:

1. I am currently the director, Sweetener Platform, with the Coca Cola Company where I have been employed for the last 12 years.
2. All experiments described below were performed at my direction and under my control, and although the dates of these experiments have been redacted, as has other proprietary information, the experiments described below were performed before April 12, 2001, as evidenced by the following:

A. Exhibit A: Page 157 of Laboratory Notebook number 2519 of Sandy Ryan, showing the production of a reduced calorie frozen dispenser beverage.

3. I declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and

Application No. 09/838,809  
Attorney Docket No. 07738.147

further, that the statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patents issuing thereon.

Dated: July 16, 2004

By: Grant DuBois  
Grant DuBois

TITLE

PROJECT NO.

BOOK NO.

Work continued from Page 156

Diet Coke  
HB

157

Name: Low Calorie FCB  
Comments: Increased FlavorSET (BV, BW, SV, SW) =>  
Syrup Volume =>SV  
1.00 Liters

## Checks

Ingredients	Weight Per Unit (kg)	Weight Needed (g)
Part 1B		
S-8131	0.4088	1.051
Part 1		
S-604	5.6088	14.374
Part 2	5.6088	14.374
Part 3		
S-604		
S-4781	0.7788	1.996
S-4773	0.6735	2.498
	0.6735	2.496
Erythritol	88.2500	174.999
S-802	0.6780	2.500

Unit volume: 1850.00 Liters  
Carbonation: 0.0 Volumes  
Ratio (Throw) 4.0000based on column 1  
Type: Diet  
Set Sucrose to Zero? Yes

## SUCROSE

SYRUP Brk 1.60  
Density 1.00338 kg/L  
Weight 1.0034  
Volume 1.0000 L  
Acidity 0.1690 % w/w

BEVERAGE Brk 0.32  
Density 0.99842 kg/L  
Weight 4.992 kg  
Volume 5.000 L  
Acidity 0.0339 % w/v

## HFSS - 55

#NUM! 1.58  
#NUM! kg/L 1.00341 kg/L  
#NUM! kg 1.0033 kg  
1.0000 L 0.9999 L  
#NUM! % w/w 0.1680 % w/w

#NUM! 0.32  
#NUM! kg/L 0.99842 kg/L  
#NUM! kg 4.992 kg  
5.000 L 5.000 L  
0.0339 % w/v 0.0339 % w/v

## HFSS - 42

1.58  
1.00341 kg/L  
1.0033 kg  
0.9999 L  
0.1680 % w/w

0.32  
0.99842 kg/L  
4.992 kg  
5.000 L  
0.0339 % w/v

good flavor level -> sweet  
\* need to inc. sweetness

\* ice crystals too big  
inc. 4761, 4773, 802

## WEIGHTS based on dsb:

Sweetener (dsb)	0.00 g	#NUM! g	0.00 g
Syrup Water	789.10	789.10	789.02
Beverage Water	3988.70	3988.70	3988.29
Total Water	4777.79	4777.79	4777.31

## \*\* WEIGHTS based on % solids of =&gt;

Sweetener (as is)	77.00%	#NUM! g	71.00%
Syrup Water	—	#NUM! g	0.00 g
Beverage Water	—	3988.70	789.02
Total Water	—	#NUM!	3988.29
			4777.31

83.672 214.287

Lab Diet FCB

CONFIDENTIAL

9:08 AM 11/29/00

DATE

AND UNDERSTOOD BY

**X. Related Proceedings Appendix**

<<None>>